



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,890	10/16/2003	Robert Urscheler	62739C	9015

109 7590 05/04/2005

THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION  
P. O. BOX 1967  
MIDLAND, MI 48641-1967

EXAMINER
----------

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
----------	--------------

1762

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/691,890

Applicant(s)

URSCHELER ET AL.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) 28, 29, 51 and 52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-27, 30-50 and 53-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of Group I, claims 1-27, 30-50 and 53-74 in the reply filed on March 7, 2005 is acknowledged. The traversal is on the ground(s) that it would not be a burden to examiner the claims of Group II as only 4 claims are present. This is not found persuasive because Group II is directed to product claims that are distinct from the method claims of Group I as discussed in the restriction requirement of Feb. 18, 2005. As a result, the Examiner would have to consider all searched art under two different standards, one for Group I and another for Group II. As a result, an undue burden on the Examiner would occur.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 28-29 and 51-52 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on March 7, 2005.

### *Specification*

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the subject matter of claim 7 is not present in the specification.

*Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 7 requires a "glycidyl" silane ester. The Examiner cannot determine what this is. A "glycidyl" material was taught in the specification in Example 8, but no teaching was made of the combination of general "amino silane ester" and "glycidyl' (or glycidyl) silane ester". As a result, one of ordinary skill in the art would be unable to make and/or use the invention as the components cannot be determined.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2, 3, 5, 6, 14-17, 19, 21-24, 31, 33, 34, 54-56, 66, 67, 70 and 71 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly

point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, line 2, "a composite, multilayer free flowing curtain" is confusing as worded as this claim depends from claim 1 which already has a curtain present. Is this the same curtain as in claim 1? As worded another curtain can be present.

Claim 2, line 3, "a first component" and "a second component" should be "the first component" and "the second component" if the components of claim 1 are referred to. Otherwise, other sets of components can also be present.

Claim 2, line 5, "a continuous web substrate" is confusing as worded as this claim depends from claim 1 which already has a substrate present. Is this the same substrate as in claim 1? As worded another substrate can be present.

Claim 5, line 2, "a free flowing curtain" is confusing as worded as this claim depends from claim 1 which already has a free flowing curtain present. Is this the same curtain as in claim 1? As worded another curtain can be present.

Claim 5, lines 2-3, "a composition capable of reacting" is confusing as to if any of the components of claim 1 are referred to or whether a different set of components is referred to. It is also unclear what the composition can react to.

Claim 5, line 4, "a continuous web substrate" is confusing as worded as this claim depends from claim 1 which already has a substrate present. Is this the same substrate as in claim 1? As worded another substrate can be present.

Claim 6, line 2, "a free flowing curtain" is confusing as worded as this claim depends from claim 5 and also to claim 1 from claim 5. Which curtain is referred to, or is a third curtain referred to?

Claim 6, lines 2-3, "a first component" and "a second component" should be "the first component" and "the second component" if the components of claim 1 are referred to. Otherwise, other sets of components can also be present.

Claim 6, line 4, "a continuous web substrate" is confusing as worded as this claim depends from claim 5 and claim 1, both of which already have a substrate present. Is this the same substrate as in claim 1 or 5? As worded another substrate can be present.

WB Claims 14-17, <sup>19</sup>~~18~~, 21-24 and 54-56, these claims should all depend from claim 8 rather than claim 1, or there is no antecedent basis for "the multilayer curtain".

Claim 31, line 2, "a free flowing curtain" is confusing as worded as this claim depends from claim 30 which already has a free flowing curtain present. Is this the same curtain as in claim 30? As worded another curtain can be present.

Claim 31, lines 2-3, "a first component" and "a second component" it is unclear which, if any of the "at least one component" of claim 30 is referred to.

Claim 31, line 4, "a continuous web substrate" is confusing as worded as this claim depends from claim 30 which already has a substrate present. Is this the same substrate as in claim 30? As worded another substrate can be present.

Claim 66, line 1, "at least one layer of the curtain" is confusing as worded because the curtain of claim 1 can be provided with only one layer.

Claim 67, lines 1-2, "in the interface layer" lacks antecedent basis and is confusing as worded as to what is meant by interface layer. Does applicant mean the "internal layer" of claim 3?

Claim 70, line 1, "at least one layer of the curtain" is confusing as worded because the curtain of claim 30 can be provided with only one layer.

Claim 71, lines 1-2, "in the interface layer" lacks antecedent basis and is confusing as worded as to what is meant by interface layer. Does applicant mean the "internal layer" of claim 3?

The other dependent claims do not cure the defects of the claims from which they depend.

### *Priority*

8. In the specification, applicant indicates that this case is a continuation-in-part of 10/273,866 filed 10/17/02, which is a continuation-in-part of 10/257,172, filed 4/12/02. However, a review of 10/257,172 indicates that the application does not provide support for the independent claims of the present application as the first and second components capable of reacting of claim 1 and the at least one reactable component and time of reaction of claim 30 are not provided in 10/257,152. Therefore, the earliest effective date for the present application is no earlier than 10/17/02.

*Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1-6, 8, 9, 12, 13, 16-22, 25, 30-35, 38-44, 47, 50, 53, 65-67 and 69-71 are rejected under 35 U.S.C. 102(a) as being anticipated by Yokota (US 6,746,718) or WO 01/76884 A1 (hereinafter '884).

\*\* Yokota is a continuation of PCT/JP01/02497, which issued as WO 01/76884 A1. As a result, Yokota is understood to act as a translation for '884, and '884 is rejected for the same reasons as given for Yokota. \*\*

Yokota teaches a method of producing a coated substrate. Column 3, lines 10-40. The method includes forming a free flowing curtain. Column 2, lines 20-30 and column 17, lines 15-40. The curtain has a first component and a second component capable of reacting with each other. Column 3, lines 20-40 and column 7, lines 1-55, for example. The curtain is contacted with a continuous web substrate. Column 17, lines 15-40.

Claim 2: the curtain can be multilayer. Column 17, lines 15-40. The curtain has at least two layers. Column 17, lines 15-40 and column 3, lines 20-40. One layer contains

the first component. Column 3, lines 20-40 and column 7, lines 1-55. A second layer contains the second component. Column 3, lines 20-40 and column 7, lines 1-55.

Claim 3: an internal layer can be present between the layers comprising the first component and the layer comprising the second component. Column 3, lines 20-40 and column 7, lines 1-55.

Claims 4, 33: the reaction type can be an anionic-cationic-interaction. Column 7, lines 1-55.

Claim 5: the curtain has at least one layer with a composition capable of reacting - the layer with the first or second components. Column 3, lines 20-40 and column 7, lines 1-55.

Claim 6: the curtain can have at least one layer comprising a first and second component capable of reacting with each other. Column 13, line 45 through 14, line 10 (for heat printing).

Claims 8, 32: the curtain can be a composite multilayer curtain. Column 17, lines 15-40.

Claims 9, 34: the reaction between the first and second components can occur when applied to the substrate, for example. Column 6, lines 10-35.

Claims 12, 35: a top layer to ensure printability can be provided. Column 14, lines 20-35.

Claims 13, 50: the substrate can have a weight of 60 g/m<sup>2</sup>. Column 17, lines 30-40.

Claims 16, 38: the curtain can be three layers. Column 17, lines 30-40.

Claims 17-18, 39-40: the curtain can have a layer with at least one pigment.

Column 13, lines 15-30. The pigment can be talc, kaolin, calcium carbonate, etc. Column 13, lines 15-30.

Claims 19-20, 41-42: the curtain can have a layer with a binder. Column 12, lines 40-50. The binder can be polyvinyl alcohol, etc. column 12, lines 40-55.

Claims 21, 43: the curtain can have a layer with an optical brightening agent. Column 12, lines 30-40 (fluorescent brightener).

Claims 22, 44: the curtain can have a surfactant. Column 12, lines 25-35.

Claims 25, 47: the substrate can be a basepaper. Column 17, lines 30-35  
^

Claims 30-31: the curtain has first and second components capable of reacting. Column 3, lines 20-40 and column 7, lines 1-55. The components can begin reacting during coating and be completely reacted before the coating process is complete. Column 6, lines 20-30 (i.e. before the end of drying as part of the coating process).

Claim 53: the curtain can contain a reactive component that reacts by external means, such as heat. Column 13, lines 40-65.

Claims 65, 69: the curtain can be formed with a slide die. Column 17, lines 15-25.

Claim 66, 67, 70, 71: the curtain can contain polyethylene oxide in any layer. Column 13, lines 15-30.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 11, 14, 15, 23, 24, 26, 36, 37, 45, 46, 48 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota (US 6,746,718) or WO 01/76884 A1 (hereinafter '884).

\*\* Yokota is a continuation of PCT/JP01/02497, which issued as WO 01/76884 A1. As a result, Yokota is understood to act as a translation for '884, and '884 is rejected for the same reasons as given for Yokota. \*\*

Yokota/'884 teaches all the features of these claims, as discussed in the 35 USC 102 rejection above, except (1) the cationic starch and anionic component (claim 11), (2)

the dried weight (claims 14, 15, 36, 37), (3) the solids content (claims 23, 24, 45, 46), (4) the not precoated or precalendered paper (claims 26, 48), (5) the epoxy functional and amine hardening agent (claim 73).

However, Yokota does teach that the components include a positively charged (cationic) compound and a negatively charged (anionic) compound. Column 7, lines 10-25. The coating can also contain starch. Column 12, lines 45-50. One of the compounds can be an amine. Column 7, lines 25-30. The coating can also contain epoxy. Column 12, lines 60-65. As to the dried weight, Yokota does teach various examples with varying composition amounts (see Example 5, column 16, line 45 through column 17, line 40, for example) with wet weights, and that these are dried. As to the solids content, Yokota does teach various examples with varying composition amounts (see Example 5, column 16, line 45 through column 17, line 40, for example). A variety of different layers can be applied. Column 5, lines 5-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to (1) and (5) modify Yokota/'884 to perform routine experimentation to optimize what positively charged and negatively charged compounds to use as suggested by the Examples of Yokota testing for optimal coating. As a result, the use of components suggested to be present such as starch, amines and epoxy materials would be tested for optimal viscosity increasing. (2) (3) It would further have been obvious to modify Yokota/'884 to perform routine experimentation to optimize the weight of the dried coating and solids content depending on the specific

information recording materials desired, given the variety of coating possibilities given by Yokota and the variety of materials that can be present. (4) It would further have been obvious to modify Yokota/'884 to use paper that had not been precoated or precalendered with an expectation of desirable coating results, because Yokota/'884 teaches to use paper in general, and untreated paper would be a well known material that would be a subset of paper that would be expected to work.

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota or WO 01/76884 as applied to claims 1-6, 8, 9, 12, 13, 16-22, 25, 30-35, 38-44, 47, 50, 53, 65-67 and 69-71 above, and further in view of Japan 11-192777 (hereinafter '777).

\*\* Yokota is a continuation of PCT/JP01/02497, which issued as WO 01/76884 A1. As a result, Yokota is understood to act as a translation for '884, and '884 is rejected for the same reasons as given for Yokota. \*\*

Yokota/'884 teaches all the features of these claims except the specific coating materials.

'777 teaches that when performing multilayer coating that can be curtain coating, that when it is desirable to increase viscosity by reacting components in layers together, polyvinyl alcohol and borax can be used as the two components. See the abstract, paragraphs [0031] and [0044]—[0047].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokota/'884 to use reactive materials such as taught by

'777 in order to provide desirable viscosity increase, because Yokota/'884 teaches reactive material from different layers to increase viscosity and '777 teaches that two such components for such a process are polyvinyl alcohol and borax.

15. Claims 27, 49, 54-64 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota or WO 01/76884 as applied to claims 1-6, 8, 9, 12, 13, 16-22, 25, 30-35, 38-44, 47, 50, 53, 65-67 and 69-71 above, and further in view of Schweizer Article (Premetered Coating Processes: Advantages and Applications) (as provided by applicant).

\*\* Yokota is a continuation of PCT/JP01/02497, which issued as WO 01/76884  
A1. As a result, Yokota is understood to act as a translation for '884, and '884 is rejected for the same reasons as given for Yokota. \*\*

Yokota/'884 teaches all the features of these claims except (1) web speed (claims 27, 49, 57, 58, 62,63), (2) and layer numbers (claims 54-56, 59-61) and (3) the use of a slot die (claims 64, 68). Yokota teaches a variety of different layer combinations can be applied. Column 5, lines 5-35.

Schweizer Article teaches that when performing curtain coating it is well known to apply coatings at speed up to 30 m/s (1800 m/min) and with layer numbers up to over 10. see Table 1. The article also teaches that that both slot dies and slide dies are well known forms of curtain coating. See figure 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokota/'884 to use conventional curtain coating features as taught by Schweizer Article in order to provide desirable coating application, because Yokota/'884 teaches curtain coating various numbers of layers of coating and Schweizer Article teaches conventional speeds, layer numbers and die types when curtain coating.

16. Claims 10 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota or WO 01/76884 as applied to claims 1-6, 8, 9, 12, 13, 16-22, 25, 30-35, 38-44, 47, 50, 53, 65-67 and 69-71 above, and further in view of Hanaki et al (US 6060206).

\*\* Yokota is a continuation of PCT/JP01/02497, which issued as WO 01/76884 A1. As a result, Yokota is understood to act as a translation for '884, and '884 is rejected for the same reasons as given for Yokota. \*\*

Yokota/'884 teaches all the features of these claims except the specific coating materials.

Hanaki teaches that when forming information recording materials, a protection layer can desirably be provided which contains materials such as starches and polyvinyl alcohol and that this layer can desirably be cross-linked with dialdehyde or borax.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokota/'884 to use reactive materials such as taught by

Hanaki in order to provide desirable viscosity increase, because Yokota/'884 teaches reacting material from different layers to increase viscosity and '777 teaches that two such component combinations for such a process are polyvinyl alcohol and borax or starch and dialdehyde.

17. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota or WO 01/76884 as applied to claims 1-6, 8, 9, 12, 13, 16-22, 25, 30-35, 38-44, 47, 50, 53, 65-67 and 69-71 above, and further in view of Asano et al (US 6335085).

\*\* Yokota is a continuation of PCT/JP01/02497, which issued as WO 01/76884 A1. As a result, Yokota is understood to act as a translation for '884, and '884 is rejected for the same reasons as given for Yokota. \*\*

Yokota/'884 teaches all the features of these claims except the specific coating materials.

Asano teaches that when forming information recording materials, coatings such as polyurethane coatings can be formed by reacting polyisocyanate compositions and polyol compounds. Column 7, lines 10-20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yokota/'884 to use reactive materials such as taught by Asano in order to provide desirable viscosity increase, because Yokota/'884 teaches reactive material from different layers to increase viscosity and Asano teaches two reactive materials that form desirable compounds for information recording materials.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kath B/F*  
KATHERINE BAREFORD  
PRIMARY EXAMINER